

AMENDMENTS TO THE CLAIMS

The following Listing of Claims will replace all prior versions and listings of claims in this application.

LISTING OF CLAIMS

1. (Currently amended) A device for combining a current image of an object and a map image of the dwell region of the object, comprising an imaging means for producing a current image, a sensor device for detecting at least one parameter that describes a varying state of the dwell region of the object, containing a data-processing system having a memory for storing a number of map images which are categorized according to a varying state of the dwell region of the object, and a monitor for displaying the combination of the current image and the section of the map image, wherein the data-processing system [[that]] is arranged
 - a) to estimate the position of the object in the current image in relation to the map image, and
 - b) to combine the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image[[,]] using only a section of the map image being used which just covers the region around the object.
2. (Currently amended) [[A]] The device as claimed in of claim 1, wherein the object is located in a path network and the map image at least partially reproduces the path network.
3. (Currently amended) [[A]] The device as claimed in of claim 1, wherein the map image contains additional information about the structures or functions of the dwell region of the object.
- 4-6. (Cancelled)
7. (Currently amended) [[A]] The device as claimed in of claim [[5]] 1, wherein the data-processing system is arranged to select from the memory a map image whose associated

state of the dwell region of the object is a best possible match for the state of the dwell region during the current image.

8. (Currently amended) [[A]] The device as-claimed in of claim 1, wherein the data-processing system is arranged to assign in the map image to each pixel a probability that it belongs to a spatially-defined structure.

9. (Currently amended) [[A]] The device as-claimed in of claim 1, wherein the data-processing system is arranged to produce a distance image from the map image by a distance transformation.

10. (Currently amended) [[A]] The device as-claimed in of claim 1, wherein, in the section of the map image being used, points not belonging to a spatially-defined structure are transparent.

11. (Cancelled)

12. (Currently amended) A device for combined portrayal of a current image of an object that is located in a path network and a map image of the path network, comprising an imaging means for producing a current image, a sensor device for detecting at least one parameter that describes a varying state of the dwell region of the object, containing a data-processing system having a memory for storing a number of map images which are categorized according to a varying state of the dwell region of the object, and a monitor for displaying the combination of the current image and the section of the map image, wherein the data-processing system [[that]] is arranged

- a) in the map image to assign to each pixel a probability that it belongs to the path network;
- b) to produce a distance image from the map image by a distance transformation;
- c) by means of the distance image to estimate the position of the object in relation to the map image of the path network, and
- d) to superimpose the map image wholly or in sections on the current image or a section thereof so that the estimated position of the object in the map image is brought into register

with the actual position of the object in the current image, using only a section of the map image being used which just covers the region around the object.

13. (Currently amended) A computer-readable medium comprising instructions for performing a method for combining a current image of an object and a map image of the dwell region of the object, containing comprising the following steps:
 - a) estimating the position of the object in the current image in relation to the map image;
 - b) combining the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image, using only a section of the map image being used which just covers the region around the object.
14. (Currently amended) [[A]] The device as claimed in of claim [[6]] 1, wherein the varying state is comprises an electrocardiogram or respiratory cycle.
15. (Currently amended) [[A]] The device as claimed in of claim 8, wherein the spatially-defined structure is comprises a path network.
16. (Currently amended) [[A]] The device as claimed in of claim 10, wherein the spatially-defined structure is comprises a path network.
17. (Currently amended) [[A]] The device as claimed in of claim [[11]], wherein the imaging means comprise is an X-ray apparatus or an NMR a magnetic resonance apparatus.
18. (Currently amended) [[A]] The device as claimed in of claim 1, wherein only a section of the current image is used.
19. (Currently amended) [[A]] The method as claimed in of claim 13, wherein in the step of combining the map image with the current image, only a section of the current image is used.

20. (New) A data-processing system for combining a current image of an object and a map image of the dwell region of the object comprising a computer-readable medium comprising instructions for performing a method comprising:

storing a current image and a number of map images;

categorizing the map images according to a varying state of the dwell region of the object;

estimating the position of the object in the current image in relation to the map images; and

combining the map image around the estimated position of the object with the current image, the estimated position of the object in the map image being brought into register with the actual position of the object in the current image using only a section of the map image which just covers the region around the object.

21. (New) The system of claim 20, wherein the object is located in a path network and the map image at least partially reproduces the path network.